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## Observations of the migratory behaviour of *Vanessa cardui* in SE Turkey (Lepidoptera)

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**Abstract:** Observations of the migratory behaviour of *Vanessa cardui* in SE Turkey (Lepidoptera).

*Misc. Pap.* 187: 1-5, 6 figs. 1 Map 1 Table

In this paper, pictorial information on the observations during migratory behaviour of *Vanessa cardui* in SE Turkey is given and evaluated from various standpoints.

**Key words:** *Vanessa cardui*, Lepidoptera, migration, Turkey.

Published information on the migration of the Lepidoptera in Turkey are extremely few. Migration of *Aporia crataegi* in Central Anatolia was recorded by Şişli (1968). De Freina (1979) reported migration of *Colias crocea* in SE Turkey. About the migratory behaviour of *Vanessa cardui* in Turkey was reported by Harz (1970), and Ten Hagen (1996). Koçak (1989a) published a migration record of *Ephesia nymphaea* (Noctuidae) in SW Turkey (between Yatağan and Milas), by Aydın (pers. comm.). Koçak (1989b) reported migrating swarms of *Parahipparchia algerica* (Satyridae) in Ankara (Ayaş district, Kayalıyatak). *Colotis fausta* (Pieridae) is an other migrant species, which visits south-eastern provinces of Turkey regularly in late autumn. Feeding, egg-laying behaviour of the species in Şirvan (Siirt Province) were observed by the authors. Furthermore, its caterpillars were reared in the captivity (Kemal et al., 2010). *Princeps demoleus* (Papilionidae) is also an important migrant species. In SE Turkey, it was reported by the authors for the first time (Koçak et al., 2006).

In the present paper, observations on the migration of *Vanessa cardui* (Argynnididae) in SE Turkey are evaluated.

On 6.iv.2019 and on 14.iv.2019, during two travels of 1184km each on the highway (numbered D360, E99, E90, D400) (**Map 1**), the authors had the opportunity to observe the migration movement of *Vanessa cardui*. Information on the observations are given in **Table 1**.

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**Table 1** – Information on the observations of *Vanessa cardui* in SE Turkey. Direction of the movements are usually from SE to NW.

localities with codes	observation time	population	weather condition	notes
Hazro crossing (Bağdere) (Diyarbakır Pr.), 21P	06.iv.2019, 10.00 a.m.	moderate	clear sky, sunny	migration observed
Siverek (Şanlıurfa Pr.), 63H	06.iv.2019	remarkably high, flight height 0-20m	sky partly cloudy	migration observed
Hilvan (Şanlıurfa Pr.), 63G	06.iv.2019	remarkably high, flight height 0-20m	sky partly cloudy	migration observed
Suruç crossing (Ego) (Şanlıurfa Pr.), 63K	06.iv.2019	remarkably high, flight height 0-20m	sky partly cloudy	migration observed
Nizip crossing (Gaziantep Pr.), 27D	06.iv.2019	remarkably high, flight height 0-20m	sky partly cloudy	migration observed
Nurdağı (Gaziantep Pr.), 27E	06.iv.2019	remarkably high, flight height 0-20m	sky partly cloudy	migration observed
Yılankale (Adana Pr.), 01Ca	06.iv.2019	sporadic	sky heavy cloudy, no sunshine	migration observed
Misis (Yakapınar, Adana Pr.), 01Aa	06.iv.2019	sporadic	sky heavy cloudy, no sunshine	migration observed
Mersin city (İçel Pr.), 33Na	06.iv.2019	sporadic	sky heavy cloudy, no sunshine	migration observed
Upper Heights of Anamur 1000-1650m (İçel Pr.), 33A	11.iv.2019	sporadic		migration observed after sunset
Ovabaşı (Anamur, İçel Pr.), 33Am	12.iv.2019	sporadic	clear sky, sunny	feeding behaviour on various Asteraceae flowers observed
Erdemli (İçel Pr.), 33F	14.iv.2019	sporadic	no sunshine	10-20m above the earth, 15-18°C, at 6:08 a.m. before sunrise
Mersin city (İçel Pr.), 33Na	14.iv.2019	sporadic	sky heavy cloudy	10-20m above the earth, 15-18°C, at 6:20 a.m.
Mezitli (İçel Pr.), 33Na	14.iv.2019	remarkably high, flight height 0-20m	sky heavy cloudy	20°C, at 6:40 a.m.
West side of Adana (Adana Pr.)	14.iv.2019	remarkably high, flight height	sky heavy cloudy	at 8:10 a.m.
Misis (Adana Pr.), 01Aa	14.iv.2019	sporadic	sky heavy cloudy	at 8:30 a.m.
Kurtkulağı (Adana Pr.)	14.iv.2019	sporadic	sky heavy cloudy	16°C at 8:53 a.m.
Toprakkale (Osmaniye Pr.), 80G	14.iv.2019	sporadic	sky heavy cloudy	19°C at 9:01 a.m.
East side of Osmaniye (Osmaniye Pr.), 80E	14.iv.2019	no specimen observed	sky heavy cloudy	23°C at 9:15 a.m. strong wind 22km/h direction E-NE
Yarbaşı (Osmaniye Pr.), 80Bc	14.iv.2019	no specimen observed	sky heavy cloudy	24°C at 9:25 a.m. strong wind 22km/h direction E-NE
Bahçe E (Osmaniye Pr.), 80A	14.iv.2019	sporadic	partly sunny	24°C at 9:35 a.m. strong wind 22km/h direction E-NE
Nurdağı (Gaziantep Pr.), 27E	14.iv.2019	sporadic	partly sunny	17°C at 9:53 a.m. strong wind 24km/h direction E
Sakçagöz (Gaziantep Pr.), 27E	14.iv.2019	sporadic	partly sunny	20°C at 10:25 a.m. wind 20km/h direction E
Gaziantep city (Gaziantep Pr.), 27B	14.iv.2019	sporadic	partly sunny	Observation: butterflies were sipping nectar of <i>Sinapis alba</i> , <i>Lavandula</i> etc.
Nizip W (Gaziantep Pr.), 27D	14.iv.2019	sporadic	partly sunny	at 11:39 a.m. wind 19km/h direction E
Şanlıurfa (Şanlıurfa Pr.), 63M	14.iv.2019	remarkably high	partly sunny	17°C at 00:36 p.m. strong wind 26-43km/h direction E
Hilvan (Şanlıurfa Pr.), 63G	14.iv.2019	remarkably high-sporadic	partly sunny	at 00:55 p.m.
Siverek (Şanlıurfa Pr.), 63H	14.iv.2019	sporadic	sky heavy cloudy, no sunshine	24°C at 01:49 p.m. wind 17-22km/h direction E
Diyarbakır W city (Diyarbakır Pr.), 21Fa	14.iv.2019	remarkably high-sporadic	sky heavy cloudy, no sunshine	19°C at 02:25 p.m. wind 13-15km/h direction E
Hazro crossing (Bağdere) (Diyarbakır Pr.), 21P	14.iv.2019	sporadic	sky heavy cloudy	20°C at 04:30 p.m. wind 17-26km/h direction E
Kozluk (Batman Pr.), 72E	14.iv.2019	sporadic	clear sky	19°C at 05:57 p.m. wind 11-15km/h direction E

### Results on the migration of *Vanessa cardui* in SE Turkey

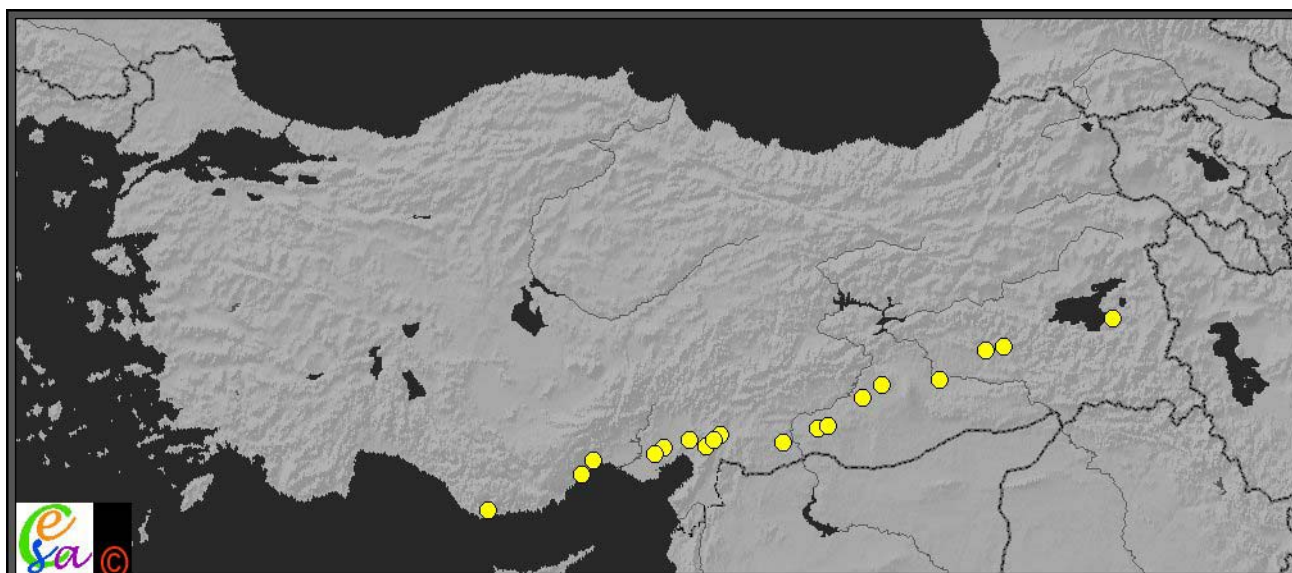
- 1) Between Anamur (İçel Pr.) and Kozluk (Batman Pr.) movements were observed at various places on the highway, on 6.iv. and 14.iv.2019 (**Map 1**)
- 2) The earliest movement was seen on 14.iv. at 6:08 a.m. before sunrise near Erdemli city (İçel Pr.). The latest movement was on 6.iv.2019 after sunset near Mersin city (İçel Pr.).
- 3) In mid-day, feeding behaviour of *Vanessa cardui* was observed in both days. *Sinapis alba* (Brassicaceae) appeared major nectar food-plant of the butterflies (**Figs 1, 2**), where grows on the roadsides, cultivated areas in the provinces Gaziantep, Şanlıurfa, Diyarbakır, Batman (**Figs 3-5**). Discontinuously planted exotic *Lavandula* on the sides of highway attracts also the butterflies.
- 4) Especially between Gaziantep and Şanlıurfa, the populations so high that many butterflies died on the roads due to heavy vehicle traffic (**Fig. 6**).
- 5) It is observed that sunlight does not play much role in migratory movement. However, the same cannot be said for strong wind.
- 6) Around Van city, the migration of *Vanessa cardui* began on the first day of April 2019. The movement is still ongoing (date 18.iv.2019).

### Acknowledgement

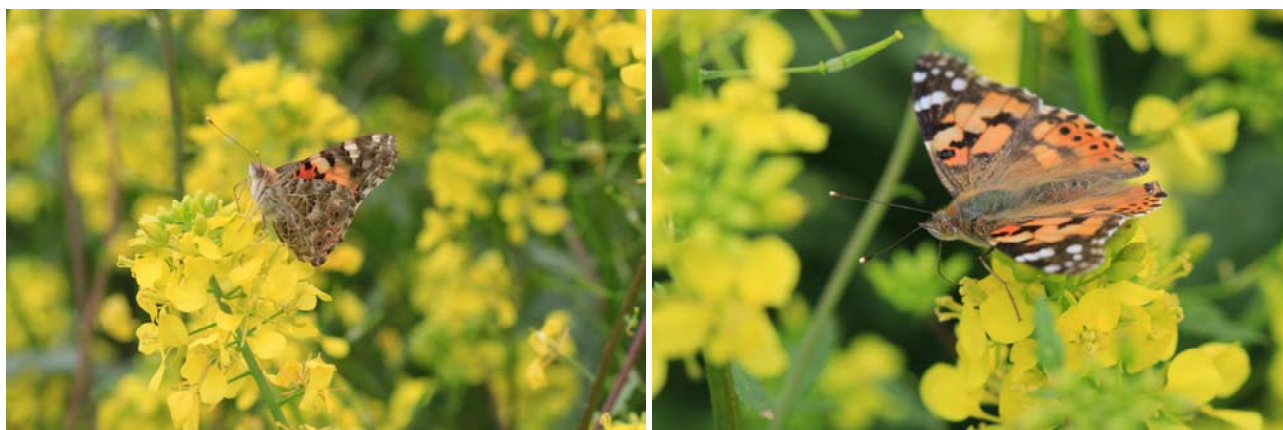
We sincerely thank to Dr Mehmet Fırat (YYU, Van) for his kind help in identifying *Sinapis alba*.

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**Map 1** – Migration of *Vanessa cardui*. Yellow markings denote approximate observing localities on the highway between Anamur and Van.



**Figs 1, 2** – *Vanessa cardui*. Feeding on *Sinapis alba* (Brassicaceae) in mid-day around Gaziantep, roadside on 6.iv.2019.



**Figs 3, 4** – *Sinapis alba* (Brassicaceae) growing on the roadsides. Major nectar food-plant, during migration of *Vanessa cardui*. Around Gaziantep, roadside on 6.iv.2019.





**Fig. 5** – *Sinapis alba* (Brassicaceae) growing in the cultivated places. Around Gaziantep on 6.iv.2019.



**Fig. 6** - Many butterflies died during its migration on the roads due to vehicle traffic. Between Adana - Gaziantep, on 6.iv.2019.

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